

Publications: Richard S. Gates

Publications in Refereed Journals	112
In Review	3
In Preparation.....	5
Abstracts, Papers and Presentations at Professional Meetings	232
Others (Extension Newsletters, Popular Press, Speeches).....	>30

BOOK CHAPTERS

1. Tinôco, I.F.F. and R.S. Gates. 2005. *Ambiência e construções para matrizes pesadas*. Chapter 2 in: *Manejo de Matrizes de Corte*. Fundação Apnco de Ciência e Tecnologia Avícolas, (FACTA) Publishers : Campinas, SP, Brazil. Pp. 11-34 of 421.
2. Gates, R.S. 2001. *Equipment for Poultry Production*. Chapter 5.1.3.5 In: *Encyclopedia of Life Support Systems*, UNESCO/EOLSS Publishers Co. Ltd.: Oxford UK. Web version only.

MONOGRAPHS

1. Bridges, T.C. and R.S. Gates. 2009. Chapter 7: *Modeling of Animal Bioenergetics for Environmental Management Applications*. In: *Livestock Energetics and Thermal Environmental Management*, ASABE: St. Joseph, MI. Pp. 151-179 of 209.

REFEREED JOURNALS

1. Gates, R.S., K.D. Casey, H. Xin, and R.T. Burns. 2009. *Building emissions uncertainty estimates*. *Transactions of the ASABE* 52(4):1345-1351.
2. Xin, H., H. Li, R.T. Burns, R.S. Gates, D.G. Overhults, and J.W. Earnest. 2009. *Use of CO₂ concentration difference or CO₂ balance to assess ventilation rate of broiler houses*. *Transactions of the ASABE* 52(4):1353-1361.
3. Singh, A., K.D. Casey, W.D. King, A.J. Pescatore, R.S. Gates, and M.J. Ford. 2009. *Efficacy of urease inhibitor to reduce ammonia emission from poultry houses*. *Journal of Applied Poultry Research*. 18:34-42.
4. Bridges, T.C., R.S. Gates, E.M. Smith and L.W. Turner. 2008. *Modeling the growth of laboratory and farm animals Part1: Monotocus animals and the relationship of birth weight, gestation time and mature size*. *Transactions of the ASABE* 51(6):2123-2133.
5. Moody, L.B., H. Li, R.T. Burns, H. Xin, R. S. Gates, S.J. Hoff and D.G. Overhults. 2008. *Southeastern Broiler Gaseous and Particulate matter Emissions Monitoring Quality Assurance Project Plan*. Published as Special ASABE peer reviewed publication. 289 pages. ASABE. St. Joseph, MI.
http://asae.frymulti.com/aqap_handbook.asp?confid=aqap2008
6. Gates, R.S. and H. Xin. 2008. *Extracting poultry behavior from time-series weigh scale records*. *Computers and Electronics in Agriculture* 62(1):8-14.

7. Green, A.R., R.S. Gates, L.M. Lawrence, and E.F. Wheeler. 2008. Continuous recording reliability analysis of three monitoring systems for horse core body temperature. *Computers and Electronics in Agriculture* 61(1):88-95.
8. Gates, R.S., K.D. Casey, E.F. Wheeler, H. Xin, and A.J. Pescatore. 2008. U.S. broiler ammonia emissions inventory model. *Atmospheric Environment* 42(14):3342-3350.
9. Topper, P.A., E.F. Wheeler, J.S. Zajaczkowski, R.S. Gates, H. Xin, Y. Liang, and K.D. Casey. 2008. Ammonia emissions from two empty broiler houses with built-up litter. *Transactions of the ASABE* 51(1):219-225. *Honorable Mention Paper Award.*
10. Casey, K.D., R.S. Gates, E.F. Wheeler, H. Xin, Y. Liang, A. Pescatore, and M. Ford. 2008. On-farm fan performance: implications for ventilation and operating cost. *Journal of Applied Poultry Research* 17(2):283-295.
11. Green, A.R., R.S. Gates and L.M. Lawrence. 2007. Equine thermoregulatory responses during summertime road transport and stall confinement. *Brazilian Journal of Biosystems Engineering* 1(1):83-92.
12. Darr, M. J., T.S. Stombaugh, S.A. Shearer, and R.S. Gates. 2007. A new course to teach microcontrollers and embedded networking to Biosystems and Agricultural Engineers. *International Journal of Engineering Education* Vol. 23.
13. Vigoderis, R.B., I.F.F. Tinôco, A.F.L. Filho, J.N. Silva, R.S. Gates, D.G. Pauli, C.E. Silva and M.C.C. Guimaraes. 2007. Construção de túnel de vento reduzido, visando a avaliação de argila expandida em sistemas de resfriamento adiabático evaporativo para arrefecimento térmico em galpões de produção animal. *Engenharia na Agricultura* 15(3):191-199.
14. Casey, K.D., S.E. Ford, J.W. McClure, Y. Zhang, and R.S. Gates. 2007. Determining fan performance using FANS: an investigation of performance impacts. *Applied Engineering in Agriculture* 23(3):333-338.
15. Casey, K.D., J.R. Bicudo, D.R. Schmidt, A. Singh, S.W. Gay, R.S. Gates, L.D. Jacobson, and S.J. Hoff. 2006. Air quality and emissions from livestock and poultry production/waste management systems. *Animal Agriculture and the Environment: National Center for Manure and Animal Waste Management White Papers*. J.M. Rice, D.F. Caldwell, F.J. Humenik, eds. ASABE: St. Joseph, MI. Pp. 1-40.
16. Wheeler, E.F., K.D. Casey, R.S. Gates, H. Xin, J.L. Zajaczkowski, P.A. Topper, Y. Liang, and A.J. Pescatore. 2006. Ammonia emissions from twelve U.S.A. broiler houses. *Transactions of the ASABE* 49(5):1495-1512.
17. Montross, M. D., G.A. Duncan and R.S. Gates. 2006. Development and testing of a low-cost condensation testing system. *Applied Engineering in Agriculture* 22(4):603-608.
18. Liang, Y., H. Xin, H. Li, R.S. Gates, E.F. Wheeler, and K.D. Casey. 2006. Effect of measurement interval on estimation of ammonia emission rates for layer houses. *Transactions of the ASAE* 49(1): 183-186.
19. Purswell, J.L., R.S. Gates, L.M. Lawrence, J.D. Jacob, T.S. Stombaugh, and R.J. Coleman. 2006. Air exchange rate in a horse trailer during road transport. *Transactions of the ASAE* 49(1):193-201.
20. Liang, Y., H. Xin, E.F. Wheeler, R.S. Gates, H. Li, J.S. Zajaczkowski, P. A. Topper, K.D. Casey, B.R. Behrends, D.J. Burnham, and F.J. Zajaczkowski. 2005. Ammonia emissions from U.S. laying houses in Iowa and Pennsylvania. *Transactions of the ASAE* 48(5):1927-1941.
21. Gates, R.S., H. Xin, K.D. Casey, Y. Liang and E.F. Wheeler. 2005. Method for measuring ammonia emissions from poultry houses. *Journal of Applied Poultry Research* 14(3):622-634.

22. Green, A.R., R.S. Gates and L.M. Lawrence. 2005. Measurement of horse core body temperature. *Journal of Thermal Biology* 30(1):370-377.
23. Li, H., H. Xin, Y. Liang, R.S. Gates, E.F. Wheeler, and A.J. Heber. 2005. Comparison of direct vs. indirect ventilation rate determination rates in layer barns using manure belts. *Transactions of the ASAE* 48(1):367-372.
24. Pescatore, A.J., K.D. Casey and R.S. Gates. 2005. Ammonia emissions from broiler houses. *Journal of Applied Poultry Research* 14(3):635-637.
25. Wilkerson, E.G., R.S. Gates, S. Zolnier, S.T. Kester, and R.L. Geneve. 2005. Predicting rooting stages in poinsettia cuttings using a root zone temperature-based model. *Journal of the American Society for Horticultural Science* 130(3):302-307.
26. Wilkerson, E.G., R.S. Gates, S. Zolnier, S.T. Kester, and R.L. Geneve. 2005. Transpiration capacity in poinsettia cuttings at different rooting stages and the development of a cutting coefficient for scheduling mist. *Journal of the American Society for Horticultural Science* 130(3):295-301.
27. Santos, R.C., I.F.F. Tinôco, J.N. da Silva, M.B. Cordeiro, M.O. de Paula, and R.S. Gates. 2004. Influência das coberturas de barro, cimento-aminato e alumínio, com duas alturas de pé-direito, no conforto térmico de galpões para produção de aves e suínos, em condições de inverno. *Engenharia na Agricultura* 12(2):145-153.
28. Singh, A., J.R. Bicudo, A.L. Tinôco, I.F.F. Tinôco, R.S. Gates, K.D. Casey, and A.J. Pescatore. 2004. Characterization of built-up broiler litter using trench and random walk methods. *Journal of Applied Poultry Research* 13:426-432.
29. Gates, R.S., K.D. Casey, H. Xin, E.F. Wheeler, and J.D. Simmons. 2004. Fan assessment numeration system (FANS) design and calibration specifications. *Transactions of the ASAE* 47(5):1709-1715.
30. Persyn, K.E., H. Xin, D. Nettleton, A. Ikeguchi, and R.S. Gates. 2004. Feeding behaviors of laying hens with or without beak trimming. *Transactions of the ASAE* 47(2):591-596.
31. Geneve, R.L., R.S. Gates, S. Zolnier, E. Wilkerson, and S.T. Kester. 2004. Environmental control systems for mist propagation of cuttings. *Acta Horticulturae* 630:297-303.
32. Brown-Brandl, T., J. A. Nienaber, H. Xin, and R.S. Gates. 2004. A literature review of swine heat production. *Transactions of the ASAE* 47(1):259-270.
33. Zolnier, S., G.B. Lyra and R.S. Gates. 2004. Evapotranspiration estimates for greenhouse lettuce using an intermittent nutrient film technique. *Transactions of the ASAE* 47(1):271-282.
34. Tinôco, I.F.F., A. Singh, J.R. Bicudo, A.L.A. Tinôco, R.S. Gates, K.D. Casey, and A.J. Pescatore. 2004. Characterization of built-up broiler litter using trench and random walk sampling methods. *World's Poultry Science Journal* 3(5):426-432.
35. Chepete, H.J., H. Xin, M. Puma, and R.S. Gates. 2004. Heat and moisture production of pullets and layers with or without the contribution of feces (4720 RP-1044). *ASHRAE Transactions* 110(2):286-299.
36. Bridges, T.C., L.W. Turner, R.S. Gates, and D.G. Overhults. 2003. Assessing the benefits of misting-cooling systems for growing/finishing swine as affected by environment and pig placement date. *Applied Engineering in Agriculture* 19(3):361-366.

37. Brown-Brandl, T., Y. Yanagi, Jr., H. Xin, R.S. Gates, R.A. Bucklin, and G.S. Ross. 2003. A new telemetry system for measuring core body temperature in livestock and poultry. *Applied Engineering in Agriculture* 19(5):583-589.
38. Wilkerson, E. and R.S. Gates. 2003. Controlled environment system for studying root zone temperature effects on poinsettia propagation. *Applied Engineering in Agriculture* 19(4):483-489.
39. Chinn, M.S., S.E. Nokes and R.S. Gates. 2003. PC based data acquisition for a solid state cultivation deep bed reactor. *Applied Engineering in Agriculture* 19(2):237-245.
40. Zolnier, S., R.S. Gates, R.L. Geneve, and J.W. Buxton. 2003. Evapotranspiration-based mist control for poinsettia propagation. *Transactions of the ASAE* 46(1):135-145.
41. Tinôco, I.F.F., R.S. Gates, and A.L.A. Tinôco. 2003. Environmental thermal comfort and performance of broiler chickens raised at high stocking density and different positive ventilation systems under heat stress conditions. *Poultry Science, EUA* 66796(1):20-35.
42. Tinôco, I.F.F., R.S. Gates, A.L.A. Tinôco, F.D.C. Baeta, and P.R. Cecon. 2003. Evaluation of broiler breeder housing in high temperature Brazilian conditions. *Transactions of the ASAE* 70786(1):10.25.
43. Tinôco, I.F.F., R.S. Gates, F.D.C. Baeta, and A.L.A. Tinôco. 2003. Stocking density and effects on the performance on broiler chickens grown under water fogging and positive tunnel ventilation systems. *Poultry Science, EUA* 66868(1):1-15.
44. Yanagi, Jr., T., H. Xin and R.S. Gates. 2002. A research facility for studying poultry responses to heat stress and its relief. *Applied Engineering in Agriculture* 18(2): 255-260.
45. Yanagi, Jr., T., H. Xin and R.S. Gates. 2002. Optimization of partial surface wetting to cool caged laying hens. *Transactions of the ASAE* 45(4):1091-1100.
46. Xin, H., R.S. Gates, M.C. Puma, and D.U. Ahn. 2002. Drinking water temperature effects on laying hens subjected to warm cyclic environments. *Poultry Science* 81:608-617.
47. Albright, L.D., R.S. Gates, K.G. Arvanitis, and A.E. Drysdale. 2001. Control strategies for plant shoot and root environments on earth and in space. *IEEE Control Systems: Agriculture and the Environment* 21(5):28-47.
48. Gates, R.S., K. Chao and N. Sigrimis. 2001. Identifying design parameters for fuzzy control of staged ventilation control systems. *Computers and Electronics in Agriculture* 31:61-74.
49. Zolnier, S., R.S. Gates, R.L. Geneve, and J.W. Buxton. 2001. Surface diffusive resistances of rooted poinsettia cuttings under controlled-environment conditions. *Transactions of the ASAE* 44(6): 1779-1787.
50. Puma, M.C., H. Xin, R.S. Gates, and D.J. Burnham. 2001. An instrumentation system for studying feeding and drinking behavior of individual poultry. *Applied Engineering in Agriculture* 17(3): 365-374.
51. Zolnier, S., R.S. Gates, R.G. Anderson, S.E. Nokes, and G.A. Duncan. 2001. Non-water-stressed baseline as a tool for dynamic control of a misting system for propagation of poinsettias. *Transactions of the ASAE* 44(1)137-147.
52. Hussein, A.S., A.H. Cantor, R.S. Gates, A.J. Pescatore, D. Burnham, M.J. Ford, and N.D. Paton. 2001. Effect of low protein diets with amino acid supplementation on broiler growth. *Journal of Applied Poultry Research* 10:354-363.

53. Bridges, T.C., L.W. Turner, R.S. Gates, and E.M. Smith. 2000. Relativity of growth in laboratory and farm animals. Part 1: Representation of physiological age and the growth rate time constant. *Transactions of the ASAE* 43(6):1803-1810.
54. Bridges, T.C., L.W. Turner, R.S. Gates, and E.M. Smith. 2000. Relativity of growth in laboratory and farm animals. Part 2: Birth weight as a predictor of animal maturity. *Transactions of the ASAE* 43(6):1811-1820.
55. Held, D., D.A. Potter, R.S. Gates, and R.G. Anderson. 2000. Modified atmosphere treatments as a potential disinfestation technique for arthropod pests in greenhouses. *Journal of Economic Entomology* 94(2):430-438.
56. Burks, T.F., S.A. Shearer, R.S. Gates, and K.D. Donohue. 2000. Backpropagation neural network design and evaluation for classifying weed species using color image texture features. *Transactions of the ASAE* 43(4):1029-1037.
57. Chao, K., R.S. Gates and N.S. Sigrimis. 2000. Fuzzy logic controller design for staged heating and ventilating systems. *Transactions of the ASAE* 43(6):1885-1894.
58. Colliver, D.G., R.S. Gates, T.F. Burks, and H. Zhang. 2000. Development of the design climatic data for the 1997 ASHRAE Handbook-Fundamentals (RP-890). *ASHRAE Transactions* 106(1):3-14.
59. Sigrimis, N.A., K.C. Arvanitis and R.S. Gates. 2000. A learning technique for a general purpose optimizer. *Computers and Electronics in Agriculture* 26(2):83-103.
60. Zolnier, S., R.S. Gates, J. Buxton, and C. Mach. 2000. Psychrometric and ventilation constraints for vapor pressure deficit control. *Computers and Electronics in Agriculture* 26(3):343-359.
61. Colliver, D.G., R.S. Gates, H. Zhang, and K.T. Priddy. 1998. Sequences of extreme temperature and humidity for design calculations (828-RP). *ASHRAE Transactions* 104(1):133-144.
62. Bridges, T.C., L.W. Turner and R.S. Gates. 1998. Economic evaluation of misting-cooling systems for growing/finishing swine through modeling. *Applied Engineering in Agriculture* 14(4):425-430.
63. Burks, T.F., L.W. Turner, R.S. Gates, T.C. Bridges, and W.L. Crist. 1998. A stochastic simulation model for predicting cow throughput in dairy parlors. *Transactions of the ASAE* 41(6):1789-1797.
64. Chao, K., R.S. Gates and R.G. Anderson. 1998. Knowledge-based control systems for single stem rose production - Part I: Systems analysis and design. *Transactions of the ASAE* 41(3):1153-1161.
65. Chao, K., R.S. Gates and R.G. Anderson. 1998. Knowledge-based control systems for single stem rose production - Part II: Implementation and field evaluation. *Transactions of the ASAE* 41(4):1163-1172.
66. Ferguson, N.S., R.S. Gates, J.L. Taraba, A.H. Cantor, A.J. Pescatore, M.J. Ford, and D.J. Burnham. 1998. The effect of dietary crude protein on growth, ammonia concentration and litter composition in broilers. *Poultry Science* 77:1481-1487.
67. Ferguson, N.S., R.S. Gates, J.L. Taraba, A.H. Cantor, A.J. Pescatore, M.L. Straw, M.J. Ford, and D.J. Burnham. 1998. The effect of dietary protein and phosphorus on ammonia concentration and litter composition in broilers. *Poultry Science* 77:1085-1093.
68. Lochte-Watson, K.R., F.A. Payne, R.S. Gates, and C.L. Hicks. 1998. Effects of pH, protein, fat and calcium on diffuse reflectance of milk. *Transactions of the ASAE* 41(3):701-707.

69. Payne, F.A., R.C. Freels, S.E. Nokes, and R.S. Gates. 1998. Diffuse reflectance changes during the culture of cottage cheese. *Transactions of the ASAE* 41(3):709-713.
70. Turner, L.W., T.C. Bridges, R.D. Coffey, R.S. Gates, G.R. Parker, T.M. Brown-Brandl, and D.G. Overhults. 1998. Comparison of observed and simulated grow-finish swine performance under summer conditions. *Applied Engineering in Agriculture* 14(4):419-423.
71. Zhang, H., R.S. Gates and D.G. Colliver. 1997. Turing machine approach to solve psychrometric attributes. *Transactions of the ASAE* 40(3):823-831.
72. Chao, K. and R.S. Gates. 1996. Design of switching control systems for ventilated greenhouses. *Transactions of the ASAE* 39(4):1513-1523.
73. Gates, R.S., D.G. Overhults and S.H. Zhang. 1996. Minimum ventilation for modern broiler facilities. *Transactions of the ASAE* 39(3):1135-1144.
74. Payne, F.A., R.S. Gates and B.F. Fannin. 1996. Measurement precision for a fiber optic diffuse reflectance sensor. *Transactions of the ASAE* 39(6):2193-2198.
75. Bridges, T.C., R.S. Gates, K.L. Chao, L.W. Turner, and H. Minagawa. 1995. Techniques for development of swine performance response surfaces. *Transactions of the ASAE* 38(5):1505-1511.
76. Chao, K.L., R.S. Gates and H. Chi. 1995. Diagnostic hardware/software system for environmental controllers. *Transactions of the ASAE* 38(3):939-947.
77. Colliver, D.G., H. Zhang, R.S. Gates, and K.T. Priddy. 1995. Determination of the 1, 2 and 5% occurrences of extreme dew-point temperatures and mean coincident dry-bulb temperatures (RP-754). *ASHRAE Transactions* 101(2):265-286.
78. Gates, R.S., L.W. Turner, H. Chi, and J. Usry. 1995. Automated weighing of group-housed growing-finishing swine. *Transactions of the ASAE* 38(5):1479-1486.
79. Gates, R.S., H. Zhang, D.G. Colliver, and D.G. Overhults. 1995. Regional variation in temperature humidity index for poultry housing. *Transactions of the ASAE* 38(1):197-205.
80. Timmons, M.B., R.S. Gates, R.W. Bottcher, T.A. Carter, J.T. Brake, and M.J. Wineland. 1995. Simulation analysis of a new temperature control method for poultry housing. *Journal of Agricultural Engineering Research* 62(4):237-245.
81. Gates, R.S. 1994. Dew point temperature error from measuring dry bulb temperature and relative humidity. *Transactions of the ASAE* 37(2):687-688.
82. Bridges, T.C., R.S. Gates and L.W. Turner. 1992. Stochastic assessment of evaporative misting for growing-finishing swine in Kentucky. *Applied Engineering in Agriculture* 8(5):685-693.
83. Gates, R.S., D.G. Overhults, R.W. Bottcher, and S.H. Zhang. 1992. Field calibration of a transient model for broiler misting. *Transactions of the ASAE* 35(5):1623-1631.
84. Gates, R.S., L.W. Turner and D.G. Overhults. 1992. A survey of environmental controllers. *Transactions of the ASAE* 35(3):993-998.
85. Gates, R.S., L.W. Turner and D.G. Overhults. 1992. Transient overvoltage testing of environmental controllers. *Transactions of the ASAE* 35(2):727-733.

86. Gates, R.S., D.G. Overhults and L.W. Turner. 1992. Mechanical backup systems for electronic environmental controllers. *Applied Engineering in Agriculture* 8(4):491-497.
87. Parker, B.F., G.M. White, M.R. Lindley, R.S. Gates, M. Collins, S. Lowry, and T.C. Bridges. 1992. Forced-air drying of baled alfalfa hay. *Transactions of the ASAE* 35(2):607-615.
88. Turner, L.W., J. P. Chastain, R.W. Hemken, R.S. Gates, and W.L. Crist. 1992. Reducing heat stress in dairy cows through sprinkler and fan cooling. *Applied Engineering in Agriculture* 8(2):251-256.
89. Bottcher, R.W., G.R. Baughman, R.S. Gates, and M.B. Timmons. 1991. Characterizing efficiency of misting systems for poultry. *Transactions of the ASAE* 34(2):586-590.
90. Gates, R.S., D.G. Overhults, B.L. Walcott, and S.A. Shearer. 1991. Constant velocity air inlet controller. *Computers and Electronics in Agriculture* 6:175-190.
91. Gates, R.S., M.B. Timmons and R.W. Bottcher. 1991. Numerical optimization of evaporative misting systems. *Transactions of the ASAE* 34(1):575-580.
92. Gates, R.S., J.L. Usry, J.A. Nienaber, L.W. Turner, and T.C. Bridges. 1991. Optimal misting method for cooling livestock housing. *Transactions of the ASAE* 34(5):2199-2206.
93. Jones, P.T., S.A. Shearer and R.S. Gates. 1991. Extraction algorithm for feather sexing poultry chicks. *Transactions of the ASAE* 34(2):635-640.
94. Usry, J.L., L.W. Turner, T.S. Stahly, T.C. Bridges, and R.S. Gates. 1991. GI tract simulation model of the growing pig. *Transactions of the ASAE* 34(4):1879-1883.
95. Tolzin, J.L., R.S. Gates, G.M. White, and B.F. Parker. 1990. Effect of cracks on the pressure – velocity relationship of air forced through baled alfalfa hay. *Transactions of the ASAE* 33(6):1959-1966.
96. Gates, R.S. and M.B. Timmons. 1989. Economic optimization of tom turkey production. *Poultry Science* 68:470-475.
97. Timmons, M.B. and R.S. Gates. 1989. Temperature dependent efficacy of evaporative cooling for broilers. *Transactions of the ASAE* 5(2):215-224.
98. Gates, R.S. and M.B. Timmons. 1988. Method to assess economic risk applied to environmental control options for animal housing. *Transactions of the ASAE* 31(1):197-201.
99. Gates, R.S. and M.B. Timmons. 1988. Stochastic and deterministic analysis of evaporative cooling benefits for laying hens. *Transactions of the ASAE* 31(3): 904-909.
100. Timmons, M.B. and R.S. Gates. 1988. Energetic model of production characteristics for tom turkeys. *Transactions of the ASAE* 31(5):1544-1551.
101. Timmons, M.B. and R.S. Gates. 1988. Predictive model of evaporative cooling and laying hen performance to air temperature and evaporative cooling. *Transactions of the ASAE* 31(5):1503-1509.
102. Merrill, W.G., R. Sagi, L.G. Petersson, T.V. Bui, H.N. Erb, D.M. Galton, and R.S. Gates. 1987. Effects of premilking stimulation on complete lactation milk yield and milking performance. *Journal of Dairy Science* 70(8):1676-1684.

103. Timmons, M.B. and R.S. Gates. 1987. Relative humidity as a ventilation control parameter in broiler housing. *Transactions of the ASAE* 30(4):1111-1115.
104. Gates, R.S., R.E. Pitt, A. Ruina, and J.R. Cooke. 1986. Cell wall elastic constitutive laws and stress-strain behavior of plant vegetative tissue. *Biorheology* 23(5):453-466.
105. Gates, R.S. and N.R. Scott. 1986. Measurements of effective teat load during machine milking. *Transactions of the ASAE* 29(4):1124-1130.
106. Timmons, M.B. and R.S. Gates. 1986. Economic optimization of broiler production. *Transactions of the ASAE* 29(5):1373-1378, 1384.
107. Upadhyaya, S.K., J.R. Cooke, R.S. Gates, and R.H. Rand. 1986. A finite element analysis of the mechanical and thermal strength of avian eggs. *Journal of Agricultural Engineering Research* 33(1):57-78.
108. Gates, R.S., N.R. Scott, R.E. Pitt, and D.L. Bartel. 1985. Elastic constitutive laws for cow teat tissue undergoing finite deformations. *Biorheology* 22(6):495-507.
109. Magee, C., R. Sagi, N.R. Scott, and R.S. Gates. 1984. Bacterial transport within and among various teatcup and cluster assemblies during milking. *Journal of Dairy Science* 67(9):2034-2040.
110. Gates, R.S., R. Sagi and R.W. Guest. 1982. Criteria for optimizing the size and configuration of milk pipelines. *Journal of Dairy Science* 65(3):410-418.
111. Sagi, R.S., R.S. Gates and N.R. Scott. 1982. Milking characteristics of teatcups with reduced liner wall movement. *Journal of Dairy Science* 66(2):266-274.
112. Gates, R.S., R. Sagi and N.R. Scott. 1981. Theoretical considerations in sizing milk pipelines. *Transactions of the ASAE* 24(6):1600-1604.

Manuscripts in Review

1. Marsh, J.R., G.B. Day V, R.S. Gates and G. Aiken. 2009. Placement assessment of radio frequency identification and temperature sensors used in horses. *Transactions of the ASABE*.
2. Casey, K.D., R.S. Gates, R.C. Shores, E.D. Thoma and D.B. Harris. 2009. Ammonia emissions from a U.S. broiler house – comparison of concurrent measurements using three different technologies. *Journal of the Air and Waste Management Association*.

Manuscripts in Preparation

1. Kuczynski, T., V. Blanes-Vidal, B. Li, R.S. Gates, I.A. Nääs, D.J. Moura, D. Berckmans and T.M. Banhazi. 2009. Impact of global warming on the health, welfare and productivity of intensively housed livestock. *CIGR e-journal*.
2. Hayes, M.D., T.S. Stombaugh, E.S. Vanzant, and R.S. Gates. Identifying points of consistent blood flow on cattle ears. *Transactions of the ASABE*.
3. Marsh, J.R., G.B. Day V, R.S. Gates and E.G. Wilkerson. Performance assessment of radio frequency identification and temperature sensors used in horses. *Biological Engineering Journal*.

4. Purswell, J.L., R.S. Gates, L.M. Lawrence and J.D. Davis. Thermal environment in a horse trailer during transport. Transactions of the ASABE.
5. Casey, K. D., R. S. Gates, E.F. Wheeler, H. Xin, Y. Liang. Quantifying measurement uncertainty for the multi-state broiler ammonia emissions project. Transactions of the ASABE.

PROCEEDINGS AND CONFERENCE PAPERS

1. Amaral, M.F.P., R.S. Gates, D.G. Overhults, I.F.F. Tinôco, H. Li, R.T. Burns, H. Xin, and J.E. Earnest. 2008. Analysis of different methods to compute ammonia concentration and emission rate. Proceedings, Eighth International Symposium, Livestock Environment VIII, Sept 1-4, Iguassu Falls, Brazil. ASABE: St. Joseph MI.
2. Burns, R.T., H. Li., H. Xin, R.S. Gates, D.G. Overhults, and J.E. Earnest. 2008. Quantification of particulate emissions from broiler houses in the southeastern United States. Proceedings, Eighth International Symposium, Livestock Environment VIII, Sept 1-4, Iguassu Falls, Brazil. ASABE: St. Joseph MI.
3. Burns, R.T., H. Li, H. Xin, R.S. Gates, D.G. Overhults, J.E. Earnest, and L. Moody. 2008. Greenhouse gas (GHG) emissions from broiler houses in the southeastern United States. ASABE Paper No. 08-4649. ASABE: St. Joseph, MI.
4. de Carvahlo, V.F., T. Yanagi, Jr, H. Xin, R.S. Gates, F.A. Damasceno, and S.R.P. de Moraes. 2008. Modeling thermal environment to evaluate the performance of broiler chickens lodged in acclimatized housing. Proceedings, Eighth International Symposium, Livestock Environment VIII, Sept 1-4, Iguassu Falls, Brazil. ASABE: St. Joseph MI.
5. Del Nero Maia, G., R.S. Gates, G.B. Day V, G.T. Sales, A. Singh, and J.L. Taraba. 2008. Contaminant gas generation as product of degraded ammonia during biofiltration. ASABE Paper No. 08-4630. ASABE: St. Joseph, MI.
6. Del Nero Maia, G., R.S. Gates, G.B. Day V., M.D. Montross, and J.L. Taraba. 2008. Comparison of water sorption isotherms applied to compost biofilters of different particle sizes. ASABE Paper No. 08-4642. ASABE: St. Joseph, MI.
7. Gates, R.S., K.D. Casey, H. Xin, R.T. Burns, and H. Li. 2008. Uncertainty analysis in animal building aerial emissions measurements. Proceedings, Eighth International Symposium, Livestock Environment VIII, Sept 1-4, Iguassu Falls, Brazil. ASABE: St. Joseph MI.
8. Hayes, M.D., T.S. Stombaugh, E.S. Vanzant, and R.S. Gates. 2008. Utilizing thermal imaging to locate blood flow in the bovine ear. ASABE Paper No. 08-4075. ASABE: St. Joseph, MI.
9. Hayes, M.D., E.S. Vanzant, T.S. Stombaugh, and R.S. Gates. 2008. Comparison of bovine blood absorption coefficients to human curves. Proceedings, Eighth International Symposium, Livestock Environment VIII, Sept 1-4, Iguassu Falls, Brazil. ASABE: St. Joseph MI.
10. Li, H., R.T. Burns, H. Xin, R.S. Gates, S. Trabue, D.G. Overhults, L. Moody, and J.E. Earnest. 2008. Hydrogen sulfide and non-methane hydrocarbon emissions from broiler houses in the southeastern United States. ASABE Paper No. 08-4417. ASABE: St. Joseph, MI.
11. Li, P., R.S. Gates, M.D. Montross, J. Tidwell, and M.B. Timmons. 2008. Evaluation of water evaporation and energy fluxes in controlled environmental saltwater shrimp production system. ASABE Paper No. 08-4320. ASABE: St. Joseph, MI.

12. Liang, Y., H. Xin, H. Li, R.S. Gates, E.F. Wheeler, K.D. Casey, B.R. Behrends, and D.J. Burnham. 2008. Dietary manipulation to reduce ammonia emission from high-rise layer houses. Proceedings, National Conference on Mitigating Air Emissions from Animal Feeding Operations: Exploring the advantages, limitations, and economics of mitigation technologies. Des Moines, IA.
13. Marsh, J.R., R.S. Gates, G.B. Day V, G.E. Aiken, and E.G. Wilkerson. 2008. Assessment of an injectable RFID temperature sensor for indication of horse well-being. ASABE Paper No. 08-4764. ASABE: St. Joseph, MI.
14. Marsh, J.R., R.S. Gates, G.B. Day V, G.E. Aiken, and E.G. Wilkerson. 2008. Assessment of an injectable temperature sensor for indication of horse well-being. Proceedings, Eighth International Symposium, Livestock Environment VIII, Sept 1-4, Iguassu Falls, Brazil. ASABE: St. Joseph MI.
15. Menegali, I., I.F.F. Tinôco, R.S. Gates, F.C. Baêta, and K.R.A. Inoue. 2008. Effect of two different minimum ventilation systems on the thermal comfort and productive performance of broiler chickens in winter conditions. Proceedings, Eighth International Symposium, Livestock Environment VIII, Sept 1-4, Iguassu Falls, Brazil. ASABE: St. Joseph MI.
16. Sales, G.T., G.B. Day V, R.S. Gates, N. Lovanh, G. Del Nero Maia, and A. Sing. 2008. Assessment of different biofilter media particle sizes for ammonia removal optimization. ASABE Paper No. 08-4201. ASABE: St. Joseph, MI.
17. Sales, G.T., E.T. Fialho, T. Yanagi, Jr., R.T.F de Freitas, V.H. Teixeira, R.S. Gates, and G.B. Day. 2008. Thermal environment influence on the swine reproductive performance. Proceedings, Eighth International Symposium, Livestock Environment VIII, Sept 1-4, Iguassu Falls, Brazil. ASABE: St. Joseph MI.
18. Sama, M.P., R.S. Gates, W.C. Adams, G.B. Day, and C.L. King. 2008. Fan assessment numeration system (FANS) scaling and upgrades. ASABE Paper No. 08-4723. ASABE: St. Joseph, MI.
19. Wheeler, E.F., K.D. Casey, R.S. Gates, H. Xin, Y. Liang, and P. Topper. 2008. Litter management strategies in relation to ammonia emissions from floor-raised birds. Proceedings, National Conference on Mitigating Air Emissions from Animal Feeding Operations: Exploring the advantages, limitations, and economics of mitigation technologies. Des Moines, IA.
20. Wheeler, E.F., K.D. Casey, R.S. Gates, H. Xin, P.A. Topper, and Y. Liang. 2008. Ammonia emissions from USA broiler chicken barns managed with new bedding, built-up litter, or acid-treated litter. Proceedings, Eighth International Symposium, Livestock Environment VIII, Sept 1-4, Iguassu Falls, Brazil. ASABE: St. Joseph MI.
21. Amaral, M.F.P., R.S. Gates, E.G. Wilkerson, D.G. Overhults, I.F.F. Tinôco, H. Li, R.T. Burns, H. Xin, and J.W. Earnest. 2007. Comparison between two systems for ammonia emission monitoring in broiler houses. Proceedings, International Symposium on Air Quality and Waste Management for Agriculture. Broomfield, CO. ASABE: St. Joseph, MI.
22. Burns, R.T., H. Xin, R.S. Gates, H. Li, L.B. Moody, D.G. Overhults, J. Earnest, and S. Hoff. 2007. Continuous monitoring method for ammonia emissions from poultry broiler houses in the United States. Ammonia Conference Abstract Book. G.J., Monteny, E. Hartung, M. van den Top, and D. Starmans, editors. Wageningen Academic Publishers: Wageningen, The Netherlands.
23. Burns, R.T., H. Xin, R.S. Gates, H. Li, D.G. Overhults, L. Moody, and J.W. Earnest. 2007. Ammonia emissions from poultry broiler systems in the southeastern United States. Proceedings, International

Symposium on Air Quality and Waste Management for Agriculture. Broomfield, CO. ASABE: St. Joseph, MI.

24. Casey, K.D., R.S. Gates, E.F. Wheeler, H. Xin, and Y. Liang. 2007. Quantifying uncertainty for the multi-state broiler ammonia emissions project. Ammonia Conference Abstract Book. G.J., Monteny, E. Hartung, M. van den Top, and D. Starmans, editors. Wageningen Academic Publishers: Wageningen, The Netherlands.
25. Wheeler, E.F., R.S. Gates, H. Xin, K. Casey, P. Topper, and Y. Liang. 2007. Ammonia emissions from layer hen and broiler chicken houses in the U.S.A. Ammonia Conference Abstract Book. G.-J. Monteny, E. Hartung, M. van den Top, and D. Starmans, editors. Wageningen Academic Publishers: Wageningen, The Netherlands.
26. Burns, R.T., H. Xin, H. Li, S. Hoff, L.B. Moody, R. Gates, D. Overhults, and J. Earnest. 2006. Monitoring system design for the southeastern broiler gaseous and particulate matter air emissions monitoring project. Proceedings, Air and Waste Management Association Air Monitoring Conference. AWMA: Pittsburgh, PA.
27. Burns, R.T., H. Xin, H. Li, S. Hoff, L. Moody, R. Gates, D. Overhults, and J. Earnest. 2006. Monitoring system design for the southeastern broiler gaseous and particulate matter air emissions monitoring project. Proceedings, Symposium on Air Quality Measurement Methods and Technology. Durham, NC. AWMA: Pittsburgh, PA.
28. Burns, R., H. Xin, R. Gates, H. Li, S. Hoff, L. Moody, D. Overhults, and J. Earnest. 2006. Monitoring system design for the southeastern broiler gaseous and particulate matter air emissions monitoring project. Workshop on Agricultural Air Quality: State of the Science. June 5-8. Bolger Conference Center: Potomac, MD.
29. Casey, K.D., R.S. Gates, E.F. Wheeler, and H. Xin. 2006. Comparison of measured estimates of annual ammonia emissions from poultry production facilities with mass balance modeling approaches. Workshop on Agricultural Air Quality: State of the Science. June 5-8. Bolger Conference Center: Potomac, MD.
30. Gates, R.S., K.D. Casey, E.F. Wheeler, and H. Xin. 2006. Estimating annual ammonia emissions from U.S. broiler facilities. Workshop on Agricultural Air Quality: State of the Science. June 5-8. Bolger Conference Center: Potomac, MD.
31. Moody, L., H. Li, R. Burns, H. Xin, and R. Gates. 2006. Quality assurance project plan (QAPP) implementation for the southeastern broiler gaseous and particulate matter air emissions monitoring project. Presentation, Workshop on Agricultural Air Quality: State of the Science. June 5-8. Bolger Conference Center: Potomac, MD.
32. Casey, K.D., R.S. Gates, A. Singh, A.J. Pescatore, E.F. Wheeler, H. Xin, and Y. Liang. 2006. Managing litter to reduce ammonia emissions from broiler chicken houses in the U.S.A. Proceedings, Poultry Information Exchange 2006. PIX Association Inc.: Surfers Paradise, Gold Coast, Australia.
33. Maia, G.D.N., R.S. Gates, E.G. Wilkerson, S.F. Higgins, A. Singh, and J.L. Taraba. 2006. Characterization of headspace gases in ventilated and impermeable swine manure tanks and their abatement using biofiltration. ASABE Paper No. 06-4027. ASABE: St. Joseph, MI.
34. Moody, L.B., H. Li, R.T. Burns, H. Xin, and R. Gates. 2006. Quality assurance project plan (QAPP) for monitoring gaseous and particulate matter emissions from southeastern broiler houses. Proceedings, Air and Waste Management Association Air Monitoring Conference. AWMA: Pittsburgh, PA.
35. Moody, L., H. Li, R. Burns, H. Xin, and R. Gates. 2006. Quality assurance project plan (QAPP) for monitoring gaseous and particulate matter air emissions from southeastern broiler houses. Proceedings, Symposium on Air Quality Measurement Methods and Technology. Durham, NC. AWMA: Pittsburgh, PA.

36. Casey, K.D., R.S. Gates, A. Singh, A.J. Pescatore, E.F. Wheeler, H. Xin, and Y. Liang. 2005. The effect of litter management on ammonia emissions from U.S. broiler chicken houses. Paper No. 615, Air and Waste Management Association 98th Annual Conference, Minneapolis, MN. AWMA: Pittsburgh, PA.
37. Crofcheck, C., R.S. Gates, S.R. Workman, M.D. Montross, H. Xin, B. Steward, S. Mikelson, S. Taylor, and I.F.F. Tinoco. 2005. Consortium for sustainable plant and animal production systems: an undergraduate exchange program. ASAE Paper No. 05-8015. ASAE: St. Joseph, MI.
38. Gates, R.S., K.D. Casey, A.J. Pescatore, E.F. Wheeler, and H. Xin. 2005. Assessing annual U.S. broiler house emissions. Paper No. 1292, Air and Waste Management Association 98th Annual Conference, Minneapolis, MN. AWMA: Pittsburgh, PA.
39. Green, A.R., G.A. Watkins, G.B. Day, J.R. Barnett, and R.S. Gates. 2005. Design of a biofilter for swine waste facility. Proceedings, Seventh International Symposium, Livestock Environment VII, Beijing, China. ASAE: St. Joseph MI.
40. Minagawa, H. and R.S. Gates. 2005. Growth and production of layers raised in a controlled thermal environment compared to those in an environment non-controlled. Proceedings, Seventh International Symposium, Livestock Environment VII, Beijing, China. ASAE: St. Joseph MI.
41. Purswell, J.L., R.S. Gates, L.M. Lawrence, T.S. Stombaugh, R.J. Coleman, and W.C. Adams. 2005. Air exchange rate in a horse trailer during transport. Proceedings, Seventh International Symposium, Livestock Environment VII, Beijing, China. ASAE: St. Joseph MI. Pp 13-20.
42. Singh, A., K.D. Casey, A.J. Pescatore, R.S. Gates, M. Ford, and W.D. King. 2005. Urease inhibitor: a novel approach to reduce ammonia emissions in poultry litter. ASAE Paper No. 05-4162. Presentation, ASAE International Meeting, Tampa FL. July 17-20. ASAE: St. Joseph, MI.
43. Singh, A., K.D. Casey, A.J. Pescatore, and R.S. Gates. 2005. Efficacy of urease inhibitor to reduce ammonia emissions from broiler litter. Proceedings, Animal Waste Management Symposium, Research Triangle Park, NC. Pp. 18.
44. Thoma, E.D., R.C. Shores, D.B. Harris, D.F. Natshke, R.A. Hashmonay, K.D. Casey, and R.S. Gates. 2005. Measurement of ammonia emissions from mechanically ventilated poultry houses using multipath tunable diode laser spectroscopy. Paper No. 542, Air and Waste Management Association 98th Annual Conference, Minneapolis, MN. AWMA: Pittsburgh, PA.
45. Casey, K.D., R.S. Gates, E.F. Wheeler, H. Xin, J.S. Zajackowski, P.A. Topper, and Y. Liang. 2004. Ammonia emissions from Kentucky broiler houses during winter, spring and summer. Paper No. 629. Air and Waste Management Association Conference, Indianapolis, IN. AWMA: Pittsburgh, PA.
46. Davis, J.D., J.L. Purswell, J.R. Bicudo, E.S. Vanzant, and R.S. Gates. 2004. Methods of remote, continuous temperature detection in beef cattle. ASAE Paper No. MC04-202. ASAE Mid-Central Section. ASAE: St. Joseph, MI.
47. Gates, R.S. 2004. Technology for Measuring Emissions: Limitations/Benefits. Proceedings, National Poultry Waste Management Symposium. J.B. Hess and K.D. Roberson, editors. Memphis, TN. Pp. 107-119.
48. Gates, R.S., K.D. Casey, E.F. Wheeler, H. Xin, A.J. Pescatore, J.L. Zajackowski, J.R. Bicudo, P.A. Topper, Y. Liang, and M. Ford. 2004. Broiler house ammonia emissions: U.S. baseline data. Multi-State Poultry Feeding and Nutrition and Health and Management Conference and Degussa Corporation Technical Symposium. Indianapolis, IN.

49. Li, H., H. Xin, Y. Liang, R.S. Gates, and E.F. Wheeler. 2004. Determination of ventilation rates for a manure-belt laying house using CO₂ balance. ASAE Paper No. MC04-201. ASAE Mid-Central Section. ASAE: St. Joseph MI. .
50. Pescatore, A.J., K.D. Casey, R.S. Gates, M.J. Ford, E.F. Wheeler, and H. Xin. 2004 Ammonia emissions from broiler houses during three consecutive flocks. Proceedings, XXII World's Poultry Congress, Istanbul, Turkey.
51. Pescatore, A.J., M.J. Ford, K.D. Casey, and R.S. Gates. 2004 Variation in the capacity of ventilation fans in broiler houses as determined by fan analysis numeration system. Proceedings, XXII World's Poultry Congress, Istanbul, Turkey.
52. Xin, H., Y. Liang, R.S. Gates, and E.F. Wheeler. 2004. Ammonia emissions from Iowa layer houses. Midwest Poultry Federation: St. Paul, MN.
53. Green, A.R., R.S. Gates, L.R. Purswell, and L.M. Lawrence. 2004. Instrumentation reliability and performance for continuous monitoring of core body temperature and heart rate in horses. ASAE Paper No. 04-403. Presentation, ASAE International Meeting, Ottawa, Ontario, Canada. August 1-4. ASAE: St. Joseph, MI.
54. Green, A.R., R.S. Gates, J.L. Purswell, L.M. Lawrence, and E.F. Wheeler. 2004. Horse physiological response to short duration transport. ASAE Paper No. 04-4035. Presentation, ASAE International Meeting, Ottawa, Ontario, Canada. August 1-4. ASAE: St. Joseph, MI.
55. Li., H., H. Xin, Y. Liang, R.S. Gates, E.F. Wheeler, and A.J. Heber. 2004. Comparison of direct vs. indirect ventilation rate determination for manure belt laying hen houses. ASAE Paper No. 04-4177. Presentation, ASAE International Meeting, Ottawa, Ontario, Canada. August 1-4. ASAE: St. Joseph, MI.
56. Liang, Y., H. Xin, E.F. Wheeler, R.S. Gates, H. Li, J.S. Zajackowski, P. Topper, and K.D. Casey. 2004. Ammonia emission from U.S. Layer Houses. ASAE Paper No. 04-4104. Presentation, ASAE International Meeting, Ottawa, Ontario, Canada. August 1-4. ASAE: St. Joseph, MI.
57. Norikane, J.H., R.G. Anderson, R.S. Gates, and D.A. Potter. 2004. The system performance of a modified atmosphere treatment for arthropod pest control. ASAE Paper No. 04-4102. Presentation, ASAE International Meeting, Ottawa, Ontario, Canada. August 1-4. ASAE: St. Joseph, MI.
58. Purswell, J.L., J. D. Jacob, R.S. Gates, and K. Salito. 2004. Scale model measurements of ventilation in a horse trailer. ASAE Paper No. 04-4006. Presentation, ASAE International Meeting, Ottawa, Ontario, Canada. August 1-4. ASAE: St. Joseph, MI.
59. Purswell, J.L., A.R. Green, R.S. Gates, and L.M. Lawrence. 2004. Measuring ventilation and ventilation effectiveness in horse trailers. ASAE Paper No. 04-4007. Presentation, ASAE International Meeting, Ottawa, Ontario, Canada. August 1-4. ASAE: St. Joseph, MI.
60. Stevenson, R.N., H. Xin, R.S. Gates, M. Beck, and D. Berckmans. 2004. Evaluating effects of cage stocking density on welfare behaviors of group-housed hens. ASAE Paper No. 04-4004. Presentation, ASAE International Meeting, Ottawa, Ontario, Canada. August 1-4. ASAE: St. Joseph, MI.
61. Wheeler, E.F., K.D. Casey, J. Zajackowski, P. Topper, R.S. Gates, H. Xin, and Y. Liang. 2004. Seasonal ammonia emission variation among twelve U.S. Broiler Houses. ASAE Paper No. 04-4105. Presentation, ASAE International Meeting, Ottawa, Ontario, Canada. August 1-4. ASAE: St. Joseph, MI.
62. Bicudo, J.R., R.S. Gates and E. Vanzant. 2003. Effects of air and water temperature and stream access on grazing cattle water-intake rates. ASAE Paper No. 03-4034. ASAE International Meeting, Las Vegas NV. ASAE: St. Joseph, MI.

63. Casey, K.D., R.S. Gates, E.F. Wheeler, J.S. Zajaczkowski, P.A. Topper, H. Xin, and Y. Liang. 2003. Ammonia emissions from broiler houses in Kentucky during winter. International Symposium on Gaseous and Odour Emissions from Animal Production Facilities. Horsens, Jutland, Denmark. CIGR.
64. Casey, K.D., R.S. Gates, E.F. Wheeler, J.S. Zajaczkowski, P.A. Topper, H. Xin, and Y. Liang. 2003. Ammonia emissions from Kentucky broiler houses during winter and spring. Proceedings, National Clean Air Conference: Linking Air Pollution Science, Policy and Management. Newcastle, NSW, Australia.
65. Davis, J.D., E.S. Vanzant, J.L. Purswell, A.R. Green, J.R. Bicudo, R.S. Gates, L. Holloway, and W. Smith. 2003. Methods of remote, continuous temperature detection in beef cattle. ASAE Paper No. 03-4008. ASAE International Meeting, Las Vegas NV. ASAE: St. Joseph, MI.
66. Duncan, G.A., F.A. Payne, R.S. Gates, M. Montross, and T. Stombaugh. 2003. Electronic accountability system for cantaloupe processing in producer's COOP. ASAE Paper No. 03-6214. ASAE International Meeting, Las Vegas NV. ASAE: St. Joseph, MI.
67. Green, A.R., J.L. Purswell, J.D. Davis, R.S. Gates, L. Lawrence, R. Coleman, and E.F. Wheeler. 2003. Methods for assessing horse well being during transport. ASAE Paper No. 03-4092. ASAE International Meeting, Las Vegas NV. ASAE: St. Joseph, MI.
68. Liang, Y., H. Xin, A. Tanaka, S.H. Lee, H. Li, E.F. Wheeler, R.S. Gates, J.S. Zajaczkowski, P. Topper, and K.D. Casey. 2003. Ammonia emissions from layer houses in Iowa. International Symposium on Gaseous and Odour Emissions from Animal Production Facilities. Horsens, Jutland, Denmark. CIGR.
69. Liang, Y., H. Xin, A. Tanaka, S.H. Lee, H. Li, E.F. Wheeler, R.S. Gates, J.S. Zajaczkowski, P. Topper, and K.D. Casey. 2003. Ammonia emissions from U.S. poultry houses: Part II – Layer houses. Proceedings, 3rd International Conference on Air Pollution from Agricultural Operations. Raleigh/Durham, NC. ASAE: St. Joseph, MI.
70. Persyn, K.E., H. Xin, A. Ikeguchi, and R.S. Gates. 2003. Feeding behaviors and pecking force of chicks with or without beak trimming. ASAE Paper No. 03-4005. ASAE International Meeting, Las Vegas, NV. ASAE: St. Joseph, MI.
71. Purswell, J.L., A.R. Green, J.D. Davis, R.S. Gates, L. Lawrence, and R. Coleman. 2003. Measuring ventilation of a horse trailer during transport. ASAE Paper No. 03-4091. ASAE International Meeting, Las Vegas, NV. ASAE: St. Joseph, MI.
72. Tinôco, I.F.F., R.S. Gates, A.L.A. Tinôco, F.C. Baêta, P.R. Cecon, and H. Xin. 2003. Evaluation of broiler breeder housing in high temperature Brazilian conditions. ASAE Paper No. 03-6185. ASAE International Meeting, Las Vegas, NV. ASAE: St. Joseph, MI.
73. Tinôco, A.L.A., T.O. Toledo, I.F.F. Tinôco, R.S. Gates, and H. Xin. 2003. A challenge for industry – to transform chicken skin into leather to benefit food safety and human health. ASAE Paper No. 03-4038. ASAE International Meeting, Las Vegas, NV. ASAE: St. Joseph, MI.
74. Vigoderis, R., I.F.F. Tinôco, A.L. Filho, J. Silva, and R.S. Gates. 2003. Prototype development for the evaluation of porous materials that compound systems of adiabatic cooling. ASAE Paper No. 03-4063. ASAE International Meeting, Las Vegas, NV. ASAE: St. Joseph, MI.
75. Wheeler, E.F., J.S. Zajaczkowski, P.A. Topper, R.S. Gates, H. Xin, K.D. Casey, and Y. Liang. 2003. Ammonia emissions from broiler houses in Pennsylvania during winter. International Symposium on Gaseous and Odour Emissions from Animal Production Facilities. Horsens, Jutland, Denmark. CIGR.

76. Wheeler, E.F., K.D. Casey, J.S. Zajaczkowski, P.A. Topper, R.S. Gates, H. Xin, Y. Liang, and A. Tanaka. 2003. Ammonia emissions from U.S. poultry houses: Part III – broiler houses. Proceedings, 3rd International Conference on Air Pollution from Agricultural Operations. Raleigh/Durham, NC. ASAE: St. Joseph, MI.
77. Xin, H., Y. Liang, A. Tanaka, R.S. Gates, E.F. Wheeler, K.D. Casey, A.J. Heber, J. Ni, and H. Li. 2003. Ammonia emissions from U.S. poultry houses: Part I – Measurement system and techniques. Proceedings, 3rd International Conference on Air Pollution from Agricultural Operations. Raleigh/Durham, NC. ASAE: St. Joseph, MI.
78. Bicudo, J.R. and R.S. Gates. 2002. Water consumption, air and water temperature issues related to portable water systems for grazing cattle. ASAE Paper No. 02-4052. ASAE International Meeting, Chicago, IL. ASAE: St. Joseph, MI.
79. Braun, M., M.D. Montross, C. Beaman, R.S. Gates, and G.A. Duncan. 2002. Development and testing of a condensation sensor for environmental control. ASAE Paper No. 02-4013. ASAE International Meeting, Chicago, IL. ASAE: St. Joseph, MI.
80. Casey, K.D., E.F. Wheeler, R.S. Gates, X. Xin, P.A. Topper, Y. Liang, A.J. Heber, and L.D. Jacobson. 2002. Quality assured measurements of livestock building emissions: Part 4. Building ventilation rate. Air and Waste Management Association Conference, San Francisco, CA. AWMA: Pittsburgh, PA.
81. Colliver, D.G., R.S. Gates and E.G. Wilkerson. 2002. Selection of appropriate design weather conditions for sizing Evaporative pad cooling systems. ASAE Paper No. 02-4038. ASAE International Meeting, Chicago, IL. ASAE: St. Joseph, MI.
82. Gates, R.S. 2002. Static pressure and temperature controlled ventilation system for a caged broiler research facility. World Congress of Computers in Agriculture and Natural Resources, Iguassu Falls, Brazil.
83. Gates, R.S., J.D. Simmons, K.D. Casey, T.J. Greis, H. Xin, E.F. Wheeler, C.L. King, and J.R. Barnett. 2002. Fan assessment numeration system (FANS) design and calibration specifications. ASAE Paper No. 02-4124. ASAE International Meeting, Chicago, IL. ASAE: St. Joseph, MI.
84. Gates, R.S., H. Xin and E.F. Wheeler. 2002. Ammonia losses, evaluations and solutions for poultry systems. Proceedings, National Poultry Waste Management Symposium. P.H. Patterson, J.P. Blake and K.D. Robertson, editors. NPWM Committee. Pp. 79-88.
85. Persyn, K.E., H. Xin and R.S. Gates. 2002. Effects of beak trimming on poultry ingestion behavior. ASAE Paper No. 02-4070. ASAE International Meeting, Chicago, IL. ASAE: St. Joseph, MI.
86. Wheeler, E.F., R.S. Gates, H. Xin, J.S. Zajaczkowski, P.A. Topper, and K.D. Casey. 2002. Field estimation of ventilation capacity using FANS. ASAE Paper No. 02-4125. ASAE International Meeting, Chicago, IL. ASAE: St. Joseph, MI.
87. Wilkerson, E.G., R.S. Gates and R.L. Geneve. 2002. Effects of root zone temperature on root development and water uptake during poinsettia propagation. ASAE Paper No. 02-4111. ASAE International Meeting, Chicago, IL. ASAE: St. Joseph, MI.
88. Xin, H., T. Wang, R.S. Gates, E.F. Wheeler, K.D. Casey, A.J. Heber, J. Ni, and T. Lim. 2002. A portable system for continuous ammonia measurement in the field. ASAE Paper No. 02-4168. ASAE International Meeting, Chicago, IL. ASAE: St. Joseph, MI.

89. Yanagi, Jr., T., H. Xin and R.S. Gates. 2002. A measurement and control system for studying animal-environment interactions. World Congress of Computers in Agriculture and Natural Resources, Iguassu Falls, Brazil.
90. Zolnier, S., G.B. Lyra, R.S. Gates, L.C. Costa, G.C. Sedyama, and M.A.N. Sedyama. 2002. Evapotranspiration estimates for hydroponic lettuce in Brazil. ASAE Paper No. 02-3153. ASAE International Meeting, Chicago, IL. ASAE: St. Joseph, MI.
91. Bottcher, R.W., R. D. Munilla, K.M. Keener, R.S. Gates. 2001. Dispersion of livestock building ventilation using windbreaks and ducts. ASAE Paper No. 01-4071, ASAE International Meeting, Sacramento, CA. ASAE: St. Joseph, MI.
92. Bridges, T.C., L.W. Turner, R.S. Gates, and D.G. Overhults. 2001. Assessing the benefits of misting-cooling systems for growing/finishing swine as affected by environment and starting date. ASAE Paper No. 01-4027 ASAE International Meeting, Sacramento, CA. ASAE: St. Joseph, MI.
93. Brown-Brandl, T.M., T. Yanagi, Jr., H. Xin, R.S. Gates, R. Bucklin, and G. Ross. 2001. Telemetry system for measuring core body temperature in livestock. ASAE Paper No. 01-4032. ASAE International Meeting, Sacramento, CA. ASAE: St. Joseph, MI.
94. Chepete, H.J., H. Xin, M. Puma, and R.S. Gates. 2001. Heat and moisture production of pullets and layers with or without the contribution of feces. ASAE Paper No. 01-4048. ASAE International Meeting, Sacramento, CA. ASAE: St. Joseph, MI.
95. Colliver, D.G., T.C. Bridges and R.S. Gates. 2001. 1-, 3-, 5- and 7-Day periods of extreme high dry-bulb temperature and enthalpy. ASAE Paper No. 01-4021. ASAE International Meeting, Sacramento, CA. ASAE: St. Joseph, MI.
96. Gates, R.S. 2001. Ammonia volatilization as affected by broiler litter rewetting and dietary manipulation. International Symposium: Addressing animal production and environmental issues. Research Triangle Park, NC. North Carolina State Animal and Poultry Waste Management Center: Raleigh, NC.
97. Gates, R.S., L.W. Turner, J. Zulovich, and J. Wurm. 2001. Potential for heat stress relief using desiccant systems in swine breeding facilities. Building Systems 2001. Rio de Janeiro, Brazil.
98. Gates, R.S. and H. Xin. 2001. Comparative analysis of measurement techniques of feeding and drinking behavior of individual poultry subjected to warm environmental condition. ASAE Paper No. 01-4033. ASAE International Meeting, Sacramento, CA. ASAE: St. Joseph, MI.
99. Wilkerson, E. and R.S. Gates. 2001. An empirical model for water uptake and root development of poinsettia cuttings. ASAE Paper No. 01-3040. ASAE International Meeting, Sacramento, CA. ASAE: St. Joseph, MI.
100. Yanagi Jr., T., H. Xin and R.S. Gates. 2001. Modeling partial surface evaporative cooling of chickens. ASAE Paper No. 01-3011. ASAE International Meeting, Sacramento, CA. ASAE: St. Joseph, MI.
101. Yanagi Jr., T. H. Xin and R.S. Gates. 2001. Optimization of intermittent partial surface cooling for heat stress relief of laying hens. ASAE Paper No. 01-4110. ASAE International Meeting, Sacramento, CA. ASAE: St. Joseph, MI.
102. Yanagi Jr., T., H. Xin and R.S. Gates. 2001. Thermal discomfort index for laying hens. ASAE Paper No. 01-4064. ASAE International Meeting, Sacramento, CA. ASAE: St. Joseph, MI.

103. Zolnier, S., R.S. Gates, R.G. Anderson, J.L. Buxton, and R. Geneve. 2001. Evapotranspiração de estacas de poinsetia sob condições parcialmente molhadas durante o período diurno (Day-time evapotranspiration of partially-rooted poinsettia cuttings). Proceedings, XXX Brazilian Congress of Agricultural Engineering – CONBEA 2001. Mabu Hotel & Resort, Foz do Iguaçu – Paraná, Brazil.
104. Zolnier, S., R.S. Gates, R.G. Anderson, J.L. Buxton, and R. Geneve. 2001. Evapotranspiração de estacas de poinsetia sob condições parcialmente molhadas durante o período noturno (Night-time evapotranspiration of partially-rooted poinsettia cuttings). Proceedings, XXX Brazilian Congress of Agricultural Engineering – CONBEA 2001. Mabu Hotel and Resort, Foz do Iguaçu – Paraná, Brazil.
105. Anderson, R.G., R.S. Gates, R.L. Geneve, and S. Zolnier. 2000. Dynamic control for mist propagation of poinsettias. Proceedings, 15th International Congress for Plastics in Agriculture.
106. Bridges, T.C., L.W. Turner and R.S. Gates. 2000. Swine performance enhancement with cooling as influenced by summer growth period and weather. Proceedings, First International Conference on Swine Housing, Des Moines, IA. ASAE: St. Joseph, MI. Pp. 348-356.
107. Gates, R.S. and C. Mach. 2000. Vapor pressure deficit control algorithm for plant studies. Proceedings, IFAC-BioRobotics II, Sekai City, Osaka, Japan.
108. Gates, R.S., K. Chao and N. Sigrimis. 2000. Fuzzy PI-like staged environment controller. Proceedings, CIGR Conference, Tsukuba City, Japan.
109. Gates, R.S., A.J. Pescatore, M.J. Ford, J.L. Taraba, K. Liberty, A.H. Cantor, and D.J. Burnham. 2000. The effect of feeding low protein diets on ammonia emission and total ammoniacal nitrogen in broiler litter. Proceedings, National Poultry Waste Management Symposium, Springdale, AR. Pp. 169-180.
110. Gates, R.S., A.J. Pescatore, J. Taraba, A.H. Cantor, K. Liberty, M.J. Ford, and D. Burnham. 2000. Dietary manipulation of crude protein and amino acids for reduced ammonia emission from broiler litter. ASAE Paper No. 00-4024. ASAE International Meeting, Milwaukee, WI. ASAE: St. Joseph, MI.
111. Gates, R.S. J.L. Taraba, K. Liberty, A.J. Pescatore, A.H. Cantor, M.J. Ford, and D.J. Burnham. 2000. Dietary manipulation for reduced ammonia emission and TAN in broiler litter. Proceedings, Second International Conference on Air Pollution from Agricultural Operations, Des Moines, IA. ASAE: St. Joseph MI.
112. Golden, V., L.W. Turner, G. Coleman, and R.S. Gates. 2000. Equine response to environmental factors: A literature review and recommendations for design and environmental modification. ASAE Paper No. 00-4074. ASAE International Meeting, Milwaukee, WI. ASAE: St. Joseph, MI.
113. Johnson, F.G., J. Zulovich, R.S. Gates, L.W. Turner, and J. Wurm. 2000. Desiccant system's potential for swine facilities applications. Proceedings, First International Conference on Swine Housing, Des Moines, IA. ASAE: St. Joseph, MI. Pp. 26-33.
114. Mach, C., R.S. Gates, D.G. Colliver, J.W. Buxton, and R.G. Anderson. 2000. Implementation and results from a steady state vapor pressure deficit crop to air controller. ASAE Paper No. 00-4088. ASAE International Meeting, Milwaukee, WI. ASAE: St. Joseph, MI.
115. Puma, M., H. Xin, R.S. Gates, and D. Burnham. 2000. Feeding and drinking patterns and growth performance of individual broilers at selected cycling air temperature and drinking water temperatures. ASAE Paper No. 00-4068. ASAE International Meeting, Milwaukee, WI. ASAE: St. Joseph, MI.

116. Taraba, J.L., R.S. Gates, L.W. Turner, and A. Lee. 2000. Ventilation, feed and loading methods effects on hydrogen sulfide emissions from swine slurry. Proceedings, Second International Conference on Air Pollution from Agricultural Operations, Des Moines, IA. ASAE: St. Joseph MI.
117. Wilkerson, E., R.L. Geneve and R.S. Gates. 2000. Image analysis for indication of seed germination. ASAE Paper No. 00-3025. ASAE International Meeting, Milwaukee, WI. ASAE: St. Joseph, MI.
118. Bottcher, R.W., D.G. Overhults, R.S. Gates, and M.B. Timmons. 1999. Field studies of time integrated variable control in broiler growout housing. ASAE Paper No. 99-4223. ASAE: St. Joseph, MI.
119. Duncan, G.A. and R.S. Gates. 1999. Greenhouse environment issues and results for float bed tobacco transplants. ASAE Paper No. 99-4167. ASAE: St. Joseph, MI.
120. Gates, R.S. and G.A. Duncan. 1999. Ventilation system design parameters for greenhouses for tobacco production. AEU-90. Department of Biosystems and Agricultural Engineering, College of Agriculture, University of Kentucky: Lexington KY.
121. Gates, R.S., K. Chao and N.S. Sigrimis. 1999. Fuzzy control simulation of plant and animal environments. ASAE Paper No. 99-3136. ASAE: St. Joseph, MI.
122. Harkins, J.D, C. Holtz, J. Boyles, W.E. Woods, A.F. Lehner, W. Carter, W. Karpiesiuk, R.S. Gates, M. Fisher, and T. Tobin. 1999. Behavioral and cardiac effects of clenbuterol, terbutaline, and furosemide in the horse: an overview. International Meeting on Clenbuterol Analyses, Chicago IL. Association of Racing Commissions.
123. Mach, C., R.S. Gates, D.G. Colliver, J.W. Buxton, and R. Anderson. 1999. Design and evaluation of vapor pressure deficit based control strategies. ASAE Paper No. 99-4111. ASAE: St. Joseph, MI.
124. Puma, M., H. Xin, R.S. Gates, and D. Burnham. 1999. An instrumentation system for measuring feeding and drinking behavior of poultry. ASAE Paper No. 99-4209. ASAE: St. Joseph, MI.
125. Zolnier, S., R.S. Gates, R. Anderson, and R. Geneve. 1999. Evaluating novel misting control techniques for poinsettia propagation. ASAE Paper No. 99-4164. ASAE: St. Joseph, MI.
126. Zolnier, S., R.S. Gates, J.W. Buxton, G.A. Duncan, and S.E. Nokes. 1999. Evapotranspiration based misting control for poinsettia propagation. ASAE Paper No. 99-4119. ASAE: St. Joseph, MI. .
127. Gates, R.S., J.L. Taraba and K.R. Liberty. 1998. Precision nutrition and litter volatilization dynamics. Proceedings, National Poultry Waste Management Symposium, Ocean City, MD.
128. Gates, R.S., K. Chao and N. Sigrimis. 1998. Design parameters for fuzzy-based control of agricultural ventilation systems. In: Control Applications and Ergonomics in Agriculture. First Workshop on Intelligent Control for Agricultural Application. International Federation of Automatic Control: Elsevier Science Ltd., Oxford, UK.
129. Gates, R.S., S. Zolnier and J. W. Buxton. 1998. Vapor pressure deficit control strategies for plant production. In: Control Applications and Ergonomics in Agriculture. First Workshop on Intelligent Control for Agricultural Application. International Federation of Automatic Control: Elsevier Science Ltd., Oxford, UK. Pp. 283-288.
130. Tao, N., R.S. Gates, W.E. Murphy, J. Buxton, and D.G. Colliver. 1998. A sunlit plant growth chamber with vapor pressure modification. ASAE Paper No. 98-4152. ASAE International Meeting, Orlando, FL. ASAE: St. Joseph, MI.

131. Turner, L.W., T.C. Bridges and R.S. Gates. 1998. Use of the NCPIG swine growth model for heat stress assessment. In: Control Applications and Ergonomics in Agriculture. First Workshop on Intelligent Control for Agricultural Application. International Federation of Automatic Control: Elsevier Science Ltd., Oxford, UK.
132. Zolnier, S., R.S. Gates, R.L. Geneve, J.W. Buxton, and S.E. Nokes. 1998. Canopy surface resistance of rooted poinsettia cuttings under controlled environment conditions. ASAE Paper No. 98-4161. ASAE International Meeting, Orlando, FL. ASAE: St. Joseph, MI.
133. Zolnier, S., R.S. Gates, R.G. Anderson, S.E. Nokes, and W.E. Murphy. 1998. Non-water-stressed baseline as a tool for dynamic control of a misting system for propagation of poinsettias. ASAE Paper No. 98-4162. ASAE International Meeting, Orlando, FL. ASAE: St. Joseph, MI.
134. Ferguson, N.S., R.S. Gates, A.H. Cantor, J.L. Taraba, A.J. Pescatore, M.L. Straw, M.J. Ford, L.W. Turner, and D.J. Burhnam. 1997. Effects of dietary crude protein on growth, ammonia concentration and litter composition in broilers. ASAE Paper No. 97-4069. ASAE International Meeting, Minneapolis, MN. ASAE: St. Joseph, MI.
135. Ferguson, N.S., R.S. Gates, A.H. Cantor, J.L. Taraba, A.J. Pescatore, M.L. Straw, M.J. Ford, L.W. Turner, and D.J. Burhnam. 1997. Reduced N and P waste production for broilers through diet manipulation. ASAE Paper No. 97-4034. ASAE International Meeting, Minneapolis, MN. ASAE: St. Joseph, MI.
136. Gates, R.S., J.L. Taraba, N.S. Ferguson, and L.W. Turner. 1997. A technique for determining ammonia equilibrium and volatilization from broiler litter. ASAE Paper No. 97-4074. ASAE International Meeting, Minneapolis, MN. ASAE: St. Joseph, MI.
137. Gates, R.S., M.B. Timmons, D.G. Overhults, and R.W. Bottcher. 1997. Fuzzy reasoning for environment control during periods of heat stress. Proceedings, Fifth International Symposium, Livestock Environment V, Bloomington MN. ASAE: St. Joseph, MI.
138. Overhults, D.G. and R.S. Gates. 1997. Energy requirements for operating tunnel ventilated broiler houses. Proceedings, Fifth International Symposium, Livestock Environment V, Bloomington, MN. ASAE: St. Joseph MI.
139. Turner, L.W., T.C. Bridges, R. Coffey, R.S. Gates, G. Parker, T.M. Brown-Brandl, and D.G. Overhults. 1997. Comparison of observed and simulated grow-finish swine performance under summer conditions. Proceedings, Fifth International Symposium, Livestock Environment V, Bloomington, MN. ASAE: St. Joseph MI.
140. Turner, L.W., R.S. Gates, C.M. Wathes, and E. Audsley. 1997. Using fuzzy logic for assessment of dust and ammonia effects on swine respiratory disease. Proceedings, Fifth International Symposium, Livestock Environment V, Bloomington, MN. ASAE: St. Joseph, MI.
141. Chao, K. And R.S. Gates. 1995. Design of switching controller systems for greenhouse production. ASAE Paper No. 95-5097. ASAE International Meeting, Chicago, IL. ASAE: St. Joseph, MI.
142. Payne, F.A., R.S. Gates and B.L. Fannin. 1995. Measurement precision for a fiber optic diffuse reflectance sensor. ASAE Paper No. 95-6788. ASAE International Meeting, Chicago, IL. ASAE: St. Joseph, MI.
143. Turner, L., R.S. Gates, R.D. Coffey, G.L. Cromwell, H.J. Monague, and T.C. Bridges. 1995. Forced evaporative cooling of growing-finishing swine. ASAE Paper No. 95-4462. ASAE International Meeting, Chicago, IL. ASAE: St. Joseph, MI.
144. Zhang, H., R.S. Gates and D.G. Colliver. 1995. Turing machines approach to solve psychrometric attributes. ASAE Paper No. 95-3260. ASAE International Meeting, Chicago, IL. ASAE: St. Joseph, MI.

145. Bridges, T.C., R.S. Gates, K.L. Chao, L.W. Turner, and H. Minagawa. 1994. Techniques for development of swine performance response surfaces. ASAE Paper No. 94-4023. ASAE International Summer Meeting, Kansas City, MO. ASAE: St. Joseph, MI.
146. Burkes, T.F., S.A. Shearer and R.S. Gates. 1994. Neural network classification of plant canopy images from textural features. ASAE Paper No. 94-3510. ASAE International Winter Meeting, Atlanta, GA. ASAE: St. Joseph, MI.
147. Chao, K., R.S. Gates and R.G. Anderson. 1994. Neural-fuzzy inference system for daily growth of single stem roses. ASAE Paper No. 94-4015. ASAE International Meeting, Kansas City, MO. ASAE: St. Joseph, MI.
148. Gates, R.S., H. Minagawa, M.B. Timmons and H. Chi. 1994. Economic optimization of Japanese swine production. ASAE Paper No. 94-4085. ASAE International Summer Meeting, Kansas City, MO. ASAE: St. Joseph, MI.
149. Gates, R.S., S.A. Shearer, L.W. Turner, and F.A. Payne. 1994. Using simulation in teaching core courses in analysis of biosystems. ASAE Paper No. 94-3614. ASAE International Winter Meeting, Atlanta, GA. ASAE: St. Joseph, MI.
150. Gates, R.S., H. Zhang, D.G. Colliver, and D.G. Overhults. 1994. Livestock heat stress parameters from long-term weather data. ASAE Paper No. 94-4017. ASAE Internantional Summer Meeting, Kansas City, MO. ASAE: St. Joseph, MI.
151. Overhults, D.G. and R.S. Gates. 1994. Energy use in tunnel ventilated broiler housing with different controls. ASAE Paper No. 94-4561. ASAE International Winter Meeting, Atlanta, GA. ASAE: St. Joseph, MI.
152. Timmons, M.B., R.S. Gates, R.W. Bottcher, T.A. Carter, J.T. Brake, and M.J. Wineland. 1994. TIV Algorithms for Poultry Environment Control. ASAE Paper No. 94-4082. ASAE International Summer Meeting, Kansas City, MO. ASAE: St. Joseph, MI.
153. Colliver, D.G., H. Zhang, R.S. Gates, and T.C. Bridges. 1993. Monthly mean dry bulb temperatures and dew point depressions. ASAE Paper No. 93-6504. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
154. Gates, R.S., D.G. Overhults and S.H. Zhang. 1993. Heat and moisture production for modern broilers. Proceedings, Livestock Environment IV. Fourth International Symposium, University of Warwick, Coventry England. E. Collins and C. Boon, editors. ASAE: St. Joseph, MI.
155. Overhults, D.G. and R.S. Gates. 1993. Energy use in tunnel ventilated broiler houses. Proceedings, Livestock Environment IV. Fourth International Symposium, University of Warwick, Coventry England. E. Collins and C. Boon, editors. ASAE: St. Joseph, MI.
156. Chao, K.L., R.S. Gates and H. Chi. 1992. Diagnostic hardware/software system for environmental controllers. ASAE Paper No. 92-3560. ASAE International Winter Meeting, Nashville, TN. ASAE: St. Joseph, MI.
157. Gates, R.S., S.H. Zhang and D.G. Overhults. 1992. Minimum ventilation for broiler housing. ASAE Paper No. 92-4532. ASAE International Winter Meeting, Nashville, TN. ASAE: St. Joseph, MI.
158. Gates, R.S., D.G. Colliver and K.T. Priddy. 1992. Stochastic uncertainty in broiler optimization. ASAE Paper No. 92-3511. ASAE International Winter Meeting, Nashville, TN. ASAE: St. Joseph, MI.

159. Bridges, T.C., R.S. Gates, L.W. Turner, and J.L. Usry. 1991. Stochastic assessment of evaporative misting on growing-finishing swine in Kentucky. ASAE Paper No. 91-4508. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
160. Fehr, R.L. and R.S. Gates. 1991. Data communications options for livestock environmental controllers. ASAE Paper No. 91-3032. ASAE International Summer Meeting, Albuquerque, NM. ASAE: St. Joseph, MI.
161. Gates, R.S., D.G. Overhults, R.W. Bottcher, and S.H. Zhang. 1991. Field calibration of a transient model for broiler misting. ASAE Paper No. 91-4561. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
162. Gates, R.S. and D.G. Overhults. 1991. Field evaluation of environmental controllers. ASAE Paper No. 91-4037. ASAE International Summer Meeting, Albuquerque, NM. ASAE: St. Joseph, MI.
163. Gates, R.S., D.G. Overhults and L.W. Turner. 1991. Transient overvoltage testing of environmental controllers. ASAE Paper No. 91-4035. ASAE International Summer Meeting, Albuquerque, NM. ASAE: St. Joseph, MI.
164. Gates, R.S., J.L. Usry and L.W. Turner. 1991. Computerized swine weighing system. ASAE Paper No. 91-4507. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
165. Overhults, D.G. and R.S. Gates. 1991. Electrical wiring for tunnel ventilated broiler houses. ASAE Paper No. 91-4553. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
166. Gates, R.S., J.L. Usry, J.A. Nienaber, L.W. Turner, and T.C. Bridges. 1990. Optimal misting method for growing-finishing hogs. ASAE Paper No. 90-4507. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
167. Parker, B.F., G.M. White, R.S. Gates, M. Collins, S. Lowry, and T.C. Bridges. 1990. Forced air baled hay drying. ASAE Paper No. 90-6031. ASAE International Summer Meeting, Columbus, OH. ASAE: St. Joseph, MI.
168. Turner, L.W., J.P. Chastain, R.S. Gates, and B.F. Parker. 1990. A Cooperative University industry agricultural electric research and extension program. ASAE Paper No. 90-3563. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
169. Usry, J.L., L.W. Turner, T.S. Stahly, T.C. Bridges, and R.S. Gates. 1990. Validation of a swine digestion/passage model (DIGEST). ASAE Paper No. 90-4509. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
170. Burks, T.F., L.W. Turner, W.L. Crist, J.L. Taraba, and R.S. Gates. 1989. PARSIM: a stochastic simulation model for determining cow throughput and labor utilization in dairy parlors. ASAE Paper No. 89-7036. ASAE International Summer Meeting, Quebec City, Quebec, Canada. ASAE: St. Joseph, MI.
171. Gates, R.S. and D.G. Overhults. 1989. Constant velocity inlet baffle. ASAE Paper No. 89-4556. ASAE International Winter Meeting, New Orleans, LA. ASAE: St. Joseph, MI.
172. Gates, R.S., M.B. Timmons and R.W. Bottcher. 1989. Optimization techniques for evaporative cooling systems. ASAE Paper No. 89-7023. ASAE International Summer Meeting, Quebec City, Quebec, Canada. ASAE: St. Joseph, MI.
173. Gates, R.S., L.W. Turner, G. Turner, and J.W. Tuttle. 1989. Measured heat production of chicks. ASAE Paper No 89-4513. ASAE International Winter Meeting, New Orleans, LA. ASAE: St. Joseph, MI.

174. Jones, P.T., S.A. Shearer and R.S. Gates. 1989. Machine vision algorithm for sexing of poultry chicks. ASAE Paper No. 89-3574. ASAE International Winter Meeting, New Orleans, LA. ASAE: St. Joseph, MI.
175. Tuttle, J., R.S. Gates, L.W. Turner, and G.M. Turner. 1989. Heat and moisture production of day old leghorn-type chicks. Presentation, 78th Annual Meeting of the Poultry Science Association, Madison, WI. July 25-28.
176. Timmons, M.B. and R.S. Gates. 1989. Computer management models for poultry systems. ASAE Paper No. 89-4045. ASAE International Summer Meeting, Quebec City, Quebec, Canada. ASAE: St. Joseph, MI.
177. Turner, L.W., J.P. Chastain, R.W. Hemken, R.S. Gates, and W.L. Crist. 1989. Reducing heat stress in dairy cows through sprinkler and fan cooling. ASAE Paper No. 89-4025. ASAE International Summer Meeting, Quebec City, Quebec, Canada. ASAE: St. Joseph, MI.
178. Gates, R.S. and M.B. Timmons. 1988. Economic optimization of tom turkey production. ASAE Paper No. 88-4067. ASAE International Summer Meeting, Rapid City, SD. ASAE: St. Joseph, MI.
179. Gates, R.S. and M.B. Timmons. 1988. Microprocessor controlled broiler environment for optimal production. Proceedings, Third International Livestock Environment Symposium, Toronto, Canada. Pp. 232-241.
180. Gates, R.S., M.B. Timmons and J.T.M. van Sonsbeek. 1988. Feed energy consumption for turkeys at optimal economic temperatures. ASAE Paper No. 88-4532. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
181. Parker, B.F., G.M. White, R.S. Gates, and M. Collins. 1988. Solar drying of baled alfalfa. ASAE Paper No. 88-4539. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
182. Tolzin, J.L., R.S. Gates, G.M. White, and B.F. Parker. 1988. Effects of cracks on the pressure-velocity relationship of baled alfalfa hay. ASAE Paper No. 88-6582. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
183. Gates, R.S. 1987. Teat tissue stresses from non-axisymmetric loads. ASAE Paper No. 87-4515. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
184. Gates, R.S. and M.B. Timmons. 1987. Microprocessor controlled broiler environment for optimal production. Proceedings, 2nd Technical Session of the International Committee of Agricultural Engineers (CIGR) on Latest Developments in Livestock Housing. University of Illinois at Urbana-Champaign: Urbana, IL.
185. Parker, B.F., M. Collins, R.S. Gates, G.M. White, G.M. Turner, S.A. Shearer, and J.L. Tolzin. 1987. Drying of baled alfalfa hay. ASAE Paper No. 87-1548. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
186. Parker, B.F., G.M. White, R.S. Gates, G.M. Turner, M. Collins, and J.L. Tolzin. 1987. Solar drying of alfalfa hay. Proceedings, American Solar Energy Society Annual Meeting, Portland, OR.
187. Scott, N.R., D.M. Galton, D.J. Aneshansely, E.A. Lissik, R.S. Gates, S.T. Mahan, and P.D. Zehr. 1987. Mechanisms of transfer of organisms through the teat canal. International Mastitis Symposium, Quebec, Quebec, Canada.
188. Timmons, M.B. and R.S. Gates. 1987. Predictive model of heat production and growth characteristics for large meat-type tom turkeys. ASAE Paper No. 87-4513. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.

189. Timmons, M.B. and R.S. Gates. 1987. Temperature dependent efficacy of evaporative cooling for broilers. ASAE Paper No. 87-4544. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
190. Turner, L.W., S.G. Jackson, R.S. Gates, and C.H. Hood. 1987. Horse housing in Kentucky – an evaluation from the viewpoint of the engineer and the horseman. ASAE Paper No. 87-4009. ASAE International Summer Meeting, Baltimore, MD. ASAE: St. Joseph, MI.
191. Gates, R.S. and M.B. Timmons. 1986. Impact of evaporative cooling in layer housing. ASAE Paper No. 86-4536. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
192. Gates, R.S. and M.B. Timmons. 1986. Real-time economic optimization of broiler production. ASAE Paper No. 86-4552. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
193. Parker, B.F., G.M. White, R.S. Gates, M. Collins, and J. Tolzin. 1986. Development of hay dryers using automatic bale wagons. ASAE Paper No. 86-6542. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
194. Timmons, M.B. and R.S. Gates. 1986. Dynamic air quality control in broiler housing. ASAE Paper No. 86-4539. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
195. Timmons, M.B. and R.S. Gates. 1985. Optimizing broiler production with an expert system. ASAE Paper No. 85-4547. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
196. Timmons, M.B. and R.S. Gates. 1985. Risk analysis methodology applied to environmental control options for animal housing: Part I. Poultry Layers. ASAE Paper No. 85-4507. ASAE International Winter Meeting, Chicago, IL. ASAE: St. Joseph, MI.
197. Gates, R.S., J.R. Cooke and S.K. Upadhyaya. 1984. Eggshell stresses from flat plate and thermal loads. ASAE Paper No. 84-5519. ASAE International Winter Meeting, New Orleans, LA. ASAE: St. Joseph, MI.
198. Gates, R.S., R.E. Pitt, A. Ruina, and J.R. Cooke. 1984. The deformed shape of a spherical cell membrane of constant volume under flat plate loading. ASAE Paper No. 84-6503. ASAE International Winter Meeting, New Orleans, LA. ASAE: St. Joseph, MI.
199. Gates, R.S., N.R. Scott, R.E. Pitt, and D.L. Bartel. 1984. Biomechanics of teat/liner interactions. ASAE Paper No. 84-3535. ASAE International Winter Meeting, New Orleans, LA. ASAE: St. Joseph, MI.
200. Merrill, W.G., R. Sagi, L.G. Petersson, T.V. Bui, R.C. Gorewit, D.M. Galton, and R.S. Gates. 1983. Effects of intensity of pre-milking stimulation on complete lactation milk yield and milking performance. Proceedings, 78th Annual Meeting of the American Dairy Association. University of Wisconsin: Madison, WI.
201. Sagi, R., R.S. Gates and N.R. Scott. 1983. Bacterial transfer within and between modified teatcups. Proceedings, 78th Annual Meeting of the American Dairy Association. University of Wisconsin: Madison, WI.
202. Sagi, R., R.S. Gates and N.R. Scott. 1982. Milking characteristics of teatcups with reduced liner wall movement. *Journal of Dairy Science* 65 (Supplement 1):174.
203. Gates, R.S., R. Sagi, N.R. Scott, and R.W. Guest. 1980. Criteria for determining pipeline diameter for milking systems. ASAE Paper No. 80-3028. ASAE International Summer Meeting, San Antonio, TX. ASAE: St. Joseph, MI.

204. Scott, N.R., M.J. Delwiche, R. Sagi, J.A. Balthazar, R.S. Gates, C. Magee, M.K. Doane, R.P. Natzke, R.C. Gorewit, W.G. Merrill, and R.W. Guest. 1980. Computer assisted management and recent advances in machine milking research. Proceedings, National Milking Center Design Conference, Rochester, NY.

ABSTRACTS

1. Tinôco, I.F.F., R.S. Gates, J.M. Fonseca, F.C. Baeta, A.L.A. Tinôco, H. Xin, and M. Cordeiro. 2003. Stocking density and effects on the performance of broiler chickens grown under water fogging and positive tunnel ventilation system. Abstract 239. Poultry Science Meeting, Madison, WI.
2. Tinôco, I.F.F., N. Zanola, R.S. Gates, A.L.A. Tinôco, F.C. Baeta, P.R. Cecon, and R. Vigoderis. 2003. Environment thermal comfort and performance of broiler chickens raised at high stocking density and different positive ventilation systems under heat stress conditions. Abstract 241. Poultry Science Meeting, Madison, WI.
3. Gates, R.S., A.J. Pescatore, K.R. Liberty, A.H. Cantor, M.J. Ford, D. Burnham, and A.S. Hussein. 2000. Broiler litter characteristics as influenced by dietary protein and amino acid supplementation. Poultry Science 79 (Suppl. 1):153.
4. Cantor, A.H., A.J. Pescatore, R.S. Gates, D.J. Burnham, M.J. Ford, and N.D. Paton. 2000. Effect of amino acid supplementation of low protein diets on broiler growth and processing yields. Poultry Science 79 (Suppl. 1):186.
5. Cantor, A.H., A.J. Pescatore, R.S. Gates, D.J. Burnham, M.J. Ford, and N.D. Paton. 2000. Effect of low protein, amino acid fortified, grower and finisher diets on broiler growth performance. Poultry Science 79 (Suppl. 1):S141.
6. Cantor, A. H., A. J. Pescatore, N.D. Paton, R.S. Gates, D.G. Overhults, C. Wood, K. Ragland, C.M. Baird, and C.A. Spears. 1999. Using distance learning for teaching poultry production. Poultry Science 78 (Suppl. 1):S55.
7. Cantor, A.H., A.J. Pescatore, R.S. Gates, D.J. Burnham, M.J. Ford, and N.D. Paton. 1999. Effect of amino acid supplementation of low protein diets on broiler growth. Poultry Science 78 (Suppl. 1):317.
8. Cantor, A.H., D. Burnham, A.J. Pescatore, R.S. Gates, N.S. Ferguson, M.J. Ford, and M.L. Straw. 1998. Influence of protein and amino acid levels in grower diets on broiler performance. Poultry Science 77 (Suppl 1):137.
9. Gates, R.S., A.H. Cantor, D. Burnham, J.L. Taraba, A.J. Pescatore, N.S. Ferguson, M.J. Ford, M.L. Straw, and K. Liberty. 1998. Effect of protein and amino acid levels in broiler grower diets on litter ammonia concentration. Poultry Science 77 (Suppl 1):138.
10. Cantor, A.H., A.J. Pescatore, C. Craycraft, K.R. Gray, C.M. Baird, A. Spears, R.S. Gates, and D.G. Overhults. 1995. Teaching poultry production through distance learning with a compressed video network. Poultry Science 74 (Suppl. 1):414.

INVITED PRESENTATIONS AND LECTURES

1. Gates, R.S. 2009. Plant and animal environmental control for the 21st century. Bioproducts and Biosystems Engineering Department Centennial Lecture Series, February 12. University of Minnesota, St. Paul.
2. Gates, R.S. 2008. Emission Measurement Technologies. Invited lecture, National Poultry Waste Management Symposium. 21-23 October, Des Moines IA.

3. Gates, R.S. 2008. U.S. animal feeding operations air emissions mitigation: state of science. Keynote address. Conference on Mitigating Air Emissions from Animal Feeding Operations: Exploring the advantages, limitations, and economics of mitigation technologies. May 19-21. Des Moines, IA.
4. Gates, R.S. 2008. Broiler, turkey and layer building ammonia emissions overview. Presentation, U.S. Poultry and Egg Association Environmental Management Seminar. March 5-6. Atlanta, GA.
5. Gates, R.S. 2006. Recent advances in livestock and poultry production systems. Invited lecture, IV Biometeorology Brazilian Conference. April 11-14. Ribeirão Preto, SP, Brazil.
6. Gates, R.S. and T. Banhazi. 2002. Applicable technologies for controlled environment systems (CES) in livestock production. Presentation, ASAP/ISAH Joint Conference. July 7-11. Adelaide, SA, Australia.
7. Gates, R.S. 2002. Poultry and livestock housing with solid waste management. Presentation, Sixth Discover Conference on Food Animal Agriculture – Nitrogen Losses to the Atmosphere from Livestock and Poultry Operations. April 28-May 1. Nashville IN. American Dairy Science Association: Savoy, IL.
8. Gates, R.S. 2001. Ammonia volatilization as affected by broiler litter rewetting and dietary manipulation. International Symposium addressing animal production and environmental issues. Research Triangle Park. North Carolina State Animal and Poultry Waste Management Center: Raleigh, NC.
9. Gates, R.S. 2001. New tendencies related to life support systems. Keynote Speech (with paper), Agribuildings 2001 Conference. Sponsored by ASAE and CIGR. September. University of Campinas, Campinas, SP, Brazil.
10. Gates, R.S. 2001. Dietary protein and ammonia production in broiler facilities. Invited Lecture, Midwest Poultry Federation Nutrition Symposia. March 13-15. St. Paul, MN.
11. Gates, R.S. 2000. Information technology and computational intelligence in real-time applications. Invited Lecture, Inaugural Session of CIGR Section VII. December. Tsukuba City, Japan.
12. Gates, R.S. 2000. Statistics and modeling concepts for EMMS Data. Instructor, Professional Development Workshop. SE-301 Environmental Physiology (Sponsor). July. ASAE: St. Joseph, MI.
13. Gates, R.S. 2000. Introduction to psychrometric properties and processes. Tech/CPD Seminar for Parameter Generation and Control (PGC), Inc. March. Asheville, NC.
14. Gates, R.S. 2000. Manipulação da Dieta Avícola Considerando a redução na emissão de poluentes ao ambiente (Poultry diet manipulation to reduce output of pollutants to environment). Invited Lecture, sponsored by EMBRAPA. April. Concordia, Brazil.
15. Tuttle, J., R.S. Gates, L.W. Turner, and G.M. Turner. 1989. Heat and moisture production of day old leghorn-type chicks. Presentation, 78th Annual Meeting of the Poultry Science Association, Madison, WI. July 25-28.

OTHER PUBLICATIONS AND REPORTS

1. Colliver, D., J. Bush, A. Davis, M. Montross, R. Fehr, R. Gates, G. Halich, and S. Nokes. 2008. Kentucky resources to meet energy needs of the 25'x'25 Initiative. Biosystems and Agricultural Engineering No. AEN-93, University of Kentucky: Lexington, KY.

2. Zhang, H., R.S. Gates and D.G. Colliver. 1995. Development and documentation of a psychrometric Turing machine. Department of Biosystems and Agricultural Engineering, Agricultural Experiment Station Paper No. RIS 95-10. University of Kentucky: Lexington, KY.
3. Colliver, D.G., H. Zhang, R.S. Gates, and T.K. Priddy. 1994. Design data for the 1%, 2 1/2% and 5% occurrences of extreme dew-point temperature, with area coincident dry-bulb temperature. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE). Project ASHRAE 754-RP, Volumes 1, 2 and 3 Draft Final Report. Approximately 900 pages.
4. Burks, T.F., L.W. Turner, W.L. Crist, J.L. Taraba, and R.S. Gates. 1988. Simulating cow throughput and labor efficiency in the dairy parlor. Dairy Research Report, University of Kentucky, College of Agriculture, Agricultural Experiment Station: Lexington, KY.